a pair of third impurity regions doped with an N-type impurity at a third concentration greater than the second concentration and formed in the semiconductor film with the pair of second impurity regions extending between the channel forming region and the pair of third impurity regions.

33. The semiconductor device according to claim 32 wherein the N-type impurity added in the first, second and third impurity regions comprises an element selected from the group 15 elements.

34. The semiconductor device according to claim 32 wherein the N-type impurity added in the first, second and third impurity regions comprises phosphorous.

35. The semiconductor device according to claim 32 wherein the side walls comprise silicon.

36. The semiconductor device according to claim 32 wherein the semiconductor device is one selected from a liquid crystal display device, an EL display device and an image sensor.

37. The semiconductor device according to claim 32 wherein the semiconductor device is one selected from a video camera, a digital camera, a projector, a goggle type display, a car navigation device, a personal computer and a portable information terminal.

38. A semiconductor device comprising:

a semiconductor film formed on an insulating surface;

a channel forming region in the semiconductor film;

a gate insulating film formed on the semiconductor film;

a gate electrode formed over the channel forming region with the gate insulating film interposed therebetween;

a pair of conductive side walls adjacent to side surfaces of the gate electrode;

a pair of first impurity regions doped with an N-type impurity at a first concentration and formed in the semiconductor film with the channel forming region extending therebetween wherein the pair of side walls overlap the pair of first impurity regions; and

a pair of second impurity regions doped with an N-type impurity at a second concentration greater than the first concentration and formed in the semiconductor film adjacent to the pair of first impurity regions; and

a pair of third impurity regions doped with an N-type impurity at a third concentration greater than the second concentration and formed in the semiconductor film with the pair of second impurity regions extending between the channel forming region and the pair of third impurity regions.

39. The semiconductor device according to claim 38 wherein the N-type impurity added in the first, second and third impurity regions comprises an element selected from the group 15 elements.

E1 cont

40. The semiconductor device according to claim 38 wherein the N-type impurity added in the first, second and third impurity regions comprises phosphorous.

41. The semiconductor device according to claim 38 wherein the side walls comprise silicon.

42. The semiconductor device according to claim 38 wherein the semiconductor device is one selected from a liquid crystal display device, an EL display device and an image sensor.

43. The semiconductor device according to claim 38 wherein the semiconductor device is one selected from a video camera, a digital camera, a projector, a goggle type display, a car navigation device, a personal computer and a portable information terminal.

44. A semiconductor device comprising:

(a) a thin film transistor over a substrate, said thin film transistor comprising:

a semiconductor film formed on an insulating surface;

a channel forming region in the semiconductor film;

a gate insulating film formed on the semiconductor film;

a gate electrode formed over the channel forming region with the gate insulating film interposed therebetween;

a pair of side walls adjacent to side surfaces of the gate electrode;

a pair of first impurity regions doped with an N-type impurity at a first concentration and formed in the semiconductor film with the channel forming region extending therebetween wherein the pair of side walls overlap the pair of first impurity regions; and

a pair of second impurity regions doped with an N-type impurity at a second concentration greater than the first concentration and formed in the semiconductor film adjacent to the pair of first impurity regions; and

a pair of third impurity regions doped with an N-type impurity at a third concentration greater than the second concentration and formed in the semiconductor film with the pair of second impurity regions extending between the channel forming region and the pair of third impurity regions;

(b) an interlayer insulating film formed over the thin film transistor; and

(c) a pixel electrode formed over the interlayer insulating film and electrically connected to one of the third impurity regions.

45. The semiconductor device according to claim 44 wherein the N-type impurity added in the first, second and third impurity regions comprises an element selected from the group 15 elements.

46. The semiconductor device according to claim 44 wherein the N-type impurity added in the first, second and third impurity regions comprises phosphorous.

47. The semiconductor device according to claim 44 wherein the side walls comprise silicon.

48. The semiconductor device according to claim 44 wherein the semiconductor device is one selected from a liquid crystal display device, an EL display device and an image sensor.

49. The semiconductor device according to claim 44 wherein the semiconductor device is one selected from a video camera, a digital camera, a projector, a goggle type display, a car navigation device, a personal computer and a portable information terminal.

50. A semiconductor device comprising:

(a) a thin film transistor formed over a substrate, said thin film transistor comprising:

a semiconductor film formed on an insulating surface;

a channel forming region in the semiconductor film;

a gate insulating film formed on the semiconductor film;

a gate electrode formed over the channel forming region with the gate insulating film interposed therebetween;

a pair of conductive side walls adjacent to side surfaces of the gate electrode;

a pair of first impurity regions doped with an N-type impurity at a first concentration and formed in the semiconductor film with the channel forming region extending therebetween wherein the pair of side walls overlap the pair of first impurity regions; and

a pair of second impurity regions doped with an N-type impurity at a second concentration greater than the first concentration and formed in the semiconductor film adjacent to the pair of first impurity regions; and

a pair of third impurity regions doped with an N-type impurity at a third concentration greater than the second concentration and formed in the

semiconductor film with the pair of second impurity regions extending between the channel forming region and the pair of third impurity regions;

(b) an interlayer insulating film formed over the thin film transistor; and

(c) a pixel electrode formed over the interlayer insulating film and electrically connected to one of the third impurity regions.

51. The semiconductor device according to claim 50 wherein the N-type impurity added in the first, second and third impurity regions comprises an element selected from the group 15 elements.

E1 cont

52. The semiconductor device according to claim 50 wherein the N-type impurity added in the first, second and third impurity regions comprises phosphorous.

53. The semiconductor device according to claim 50 wherein the side walls comprise silicon.

54. The semiconductor device according to claim 50 wherein the semiconductor device is one selected from a liquid crystal display device, an EL display device and an image sensor.

55. The semiconductor device according to claim 50 wherein the semiconductor device is one selected from a video camera, a digital camera, a projector, a goggle type display, a car navigation device, a personal computer and a portable information terminal.--

REMARKS

New claims 32-54 have been added accordingly, claims 1-14 and 31 were previously allowed.

Examination on the merits is respectfully requested.